Banha University   **Time: 1 Hour**
Computer Science and Informatics   **DBA 372: Database Management Systems**
3rd Year, Mid Term Exam   **Spring 2016-2017**

Question 1 (5 Marks): Mark right or wrong

1) The DB analyst identify the rules that govern data. **T**
2) Information is an organized collection of logically related data. **F**
3) DBMS is a software system that is used to provide controlled access to user databases. **T**
4) When inserting new row in a relation, its location is not known. **T**
5) The conceptual Model in database architecture defines the logical view of the data. **T**
6) The physical storage of the data is independent of the way the data are logically organized. **T**
7) DML is used to create database elements such as tables, views. **F**
8) An entity can represent a user of the database system. **F**
9) The relational model is where the entities are organized in a graph while some entities can be accessed through several paths. **F**
10) A candidate Key is an attribute that satisfies the requirements for being a key. **T**

Question 2 (15 Marks): Answer the following

Consider the following relations for a database that keeps track of auto sales in a car dealership (Option relation refers to some optional equipment installed in an auto):
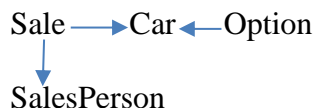
Car (Serial_no, Model, Manufacturer, Option_price)
Option (Serial_no, Option_name, Option_price)
Sale (Salesperson_id, Serial_no, Sdate, Sale_price)
SalesPerson (Salesperson_id, Name, Phone)

1) **Draw the referential diagram (3 Marks).**
   Sale ⟶ Car ⟵ Option

   SalesPerson
2) **Write SQL query to perform the following (6 Marks):**
   a) **List the manufacturers of all cars.**
      Select Manufacturer
      From Car;
   b) **For the salesperson named 'Samir Ali', get the total sale prices for all cars he sold.**
      Select Sum (sale_price)
      From Sale
      Group by Salesperson_id
      Where Salesperson_id IN
          (Select Salesperson_id
            From SalesPerson
            Where Name = 'Samir Ali');
   c) **Get names of sales persons who sell cars with price >100000.**
      Select SalesPerson.Name
      From SalesPerson, Sale
      Where SalesPerson.Salesperson_id = Sale. Salesperson_id
      And Sale.Sale_Price>100000;
3) **Draw the ER diagram of the above database illustrating the entities, relations, and attributes according to the following rules (6 Marks):**

-A car may have some options or no options at all. An option may be contained in many cars.
-A salesperson sell many cars. A car is sold by one salesperson.
(hint: sale relation is not a basic entity)